

**THE NORTH AMERICAN SPECIES OF THE
GENUS ORNIX Tr.**

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(Plate IV.)

A well defined genus of the Micro-lepidopterous family Tineidæ, characterized as follows: head rough-haired, more or less appressed on the face, two large tufts on the vertex, directed more or less forward. Antennæ as long as the forewings, simple, basal joint without pecten. Labial palpi moderately long, smooth scaled, curved and more or less ascending; third joint pointed, shorter than the second. Maxillary palpi distinct, porrect and of moderate length. Forewings elongate-lanceolate; vein $1b$ not furcate at base, 11 veins, 3 absent, 6 and 7 usually stalked, latter to costa. Hindwings narrower than the forewings, narrowly lanceolate, cilia 2-3; vein 3 sometimes absent, cell open between 4 and 5, 5 and 6 sometimes stalked.

Of the species heretofore enumerated in our lists, but few are definitely recognized; this is due in part to faulty description, which leaves the identity of a species in serious doubt, and again to the fact that several of Clemens' species were described from captured specimens, their food-plant being unknown, and the type, either lost or in such a condition as to make identification impossible. *Ornix acerifoliella* does not belong here, but is the type of *Paraclemensia* Busck. *O. quercifoliella* Ch. belongs to *Gracilaria*—*Dialectica* Wlsh.—and is a synonym of *Gracilaria strigifinitella*.

Thus far I have seen no representatives of the genus from the Pacific Slope. The species appear to prefer the temperate and more northern regions. If those who are interested in the furtherance of our knowledge of the Micro-lepidoptera of our fauna will give more close attention to the breeding of material, I have no doubt that many more species will be discovered than are here enumerated, and almost all of which were bred from the immediate vicinity of the writer.

The species arrange themselves into two natural groups. The first of these is characterized by the forewing being of a dark golden

or purple brown color, with silvery-white or yellowish, shining, marginal spots. The second group has the forewing grayish-fuscous to brown or dark brown, with numerous oblique costal striae, mostly white, rarely yellowish and without any metallic lustre. The species comprising this group resemble each other very much, are closely related and difficult to distinguish. The principal characters to be relied upon are the markings of the labial palpi, coloration of the head, the dark ciliary lines, the plical spots and last but not least, the food plant.

The following characters are common to all of the last group: Maxillary palpi white, sometimes slightly dusted with fuscous externally. Antennæ fuscous or brown above, indistinctly annulate with and beneath paler. Costal striae rarely definite in number, generally ill defined, obscure and directed obliquely backward in basal half of wing, the outer striae distinct, more or less perpendicular to the costal margin, the last stria as a rule forms a curved line extending through both the costal and dorsal cilia; immediately behind this line and in the apex of the wing is a dark blackish spot. Generally speaking the interstitial spaces are darker than the color of the wing. In the fold are two spots or patches—plical spots—rarely absent; the first of these is at one-fourth, the second about the middle, these spots vary in size and form, but appear to be fairly constant for each species. That part of the wing below the fold—subplical space—is in almost all the species, more or less mixed with white; basal part generally white. In the cilia, commencing about what would correspond to the tornus, are three darker lines, the first about the middle, the second nearer and the third on the free ciliary margin; this last line either extends entirely around the apex, or it coalesces below the apex of the wing, with the second line, and in this case the cilia are white on their free margin around the apex; generally there is a short fragmentary line below the apex and between the first and second line. Anterior and middle legs dark blackish-fuscous; femora spotted with white; end of tibiae white; tarsi white, joints fuscous at apex; hind legs whitish, tarsal joints darker at the apex. Anal bush in the male generally a sordid yellow.

Generally the larva at first forms a nepticula-like tract, which widens into a blotch-mine. When full grown it leaves the mine and forms a cocoon under the turned over edge of the leaf. According

to Chambers *O. inusitatumella* Ch. proves an exception to this rule, as the larva pupates in the mine. The pupal case is projected from the cocoon during the emergence of the imago. The latter in repose, like *Gracilaria*, *Coriscium*, sits with the anterior part of the body elevated.

Only two of the European species occur in North America—*O. guttea* and *anglicella*. Of other European species, of which authentic specimens had been placed at my disposal by the National Museum, none correspond with species herein described.

SYNOPTIC TABLE OF SPECIES.

Forewings with lustrous, white or yellow marginal spots.....	1.
Forewings with numerous costal striae, never lustrous.....	4.
1. Four or more costal spots	2.
With two costal spots	boreasella.
2. With entire fascia	3.
Without such a fascia	guttea.
3. With five costal spots; cilia not tipped with dark brown around apex.	preeiosella.
With six costal spots; cilia tipped with dark brown.....	kalmiella.
4. Cilia around the apex not tipped with blackish scales	5.
With blackish scales.....	9.
5. Third joint of palpi conspicuously banded with dark fuscous	6.
Third joint of labial palpi at most spotted with fuscous	7.
6. Larger, dorsal margin of forewing with base and a spot behind the anal angle blackish	dubitella.
Smaller, without these characters	erataegifoliella.
7. Costal striae equal and equidistant.....	melanotella.
Outer costal striae more strongly marked, conspicuous.....	8.
8. With curved dorsal line before the apex	conspicuella.
Without such a line	arbitrella.
9. Third joint of palpi conspicuously banded with dark fuscos	10.
Third joint of palpi white, or inconspicuously spotted with fuscous	15.
10. Costal cilia not tipped with dark scales before the apex	anglicella.
Without that character.....	11.
11. Ground color of entire forewing uniform	prunivorella.
Subplical space of forewing intermixed with white	12.
12. Plical spots not attaining the dorsal margin	quadripunctella.
Plical spots large, attaining the dorsal margin	13.
13. Costal striae of at least moderate length	vieinella.
Costal striae very short, almost reduced to spots	strobivorella.
15. Fifth costal stria, from the apex, extends to dorsal margin.	
Without such character	arbutifoliella.
Without such character	obliterella.

O. boreasella Clem.—"Forewings dark fuscous, with two white costal spots, one exterior to the middle of the costa, and the other midway between the first and the apex of the wing; and with two white dorsal spots, one a little interior to the first costal spot, and the other with some scattered white scales opposite the second costal spot. Cilia dark fuscous, with a white patch behind the second dorsal spot, and apparently a few white scales on the costa behind the tip. The apical spot is not distinct if present, the apex being nearly denuded of cilia and scales."

The above is Dr. Clemens' description of this species. Type in the Academy of Natural Sciences, Philadelphia. In poor condition when described. Head, abdomen and wings of one side wanting. Although the head is wanting and the neuration of the wing differs somewhat from the normal form, according to Clemens, I nevertheless believe it to be a true *Ornix*. There should be no difficulty to identify the species if found.

O. guttea Hw.—Palpi whitish. Head ochreous, face paler. Antennæ brown, faintly annulate with and paler beneath. Forewings fuscous brown, with a purplish lustre; four or five costal and two dorsal spots, first costal spot at one-fourth, second spot just before the middle, third nearly at three-fourths, the fourth spot just before the apex is sometimes duplicated; dorsal spots triangular, somewhat oblique at two-fifths and three-fifths respectively. Cilia fuscous, with three darker lines, traversed by an indistinct pale line below the apex and another corresponding to the second dorsal spot. Hindwings fuscous, cilia concolorous. Legs fuscous, femora and tibiae spotted with white; tarsi whitish, joints brown at the apex. Thorax and abdomen fuscous brown. Expanse 10-12.5 mm.; .4-.5 inch.

This rather common European species occurs in our fauna. Two specimens in my collection, collected by and received from Mr. Albert Shaw, Hampton, N. H., entirely correspond with an authentic specimen of this species in the National Museum collection. In the specimens before me the last costal spot is very small, confined to the cilia and might readily be overlooked. The larva, according to Meyrick, is yellowish, dorsal line dark green or reddish. Head dark brown. It lives in folded leaves of apple.

Var. **solitariella** Pl. IV, fig. 1.

A specimen in the National Museum collection presents the following differences from the typical form :

Head grayish-yellow, intermixed with dark fuscous. Forewings with two very conspicuous costal spots before the apex, perpendicular to the margin and which nearly reach the dorsal margin. Three distinct dorsal spots, the first at less than one-fifth, nearly perpendicular to the margin and reaches to the middle of the wing. All other marginal spots correspond to *guttea*. Cilia more whitish

between the second and third dark line, a conspicuous white patch below the apex. Expanse 13.5 mm.; .54 inch.

Hab.—Washington, D. C.

The specimen, a male, was bred from apple.

O. kalmiella n. sp.—Pl. IV, fig. 3.—Palpi white. Face silvery white, intermixed with fuscous. Head fuscous, sparsely intermixed with white. Thorax and forewing golden brown, with considerable lustre, the latter with six costal and three dorsal, silvery white, obliquely placed spots, with pearly lustre; first costal spot at one-sixth, second at one-third, third about the middle and the fourth at two-thirds; these four spots are nearly equidistant, extend obliquely backward to or beyond the middle of the wing, except the third, which does not quite attain it. The second costal spot unites with the first dorsal and forming thus an obtusely angulated fascia. Just before the apex are two approximate costal spots, pointing obliquely forward. First dorsal spot at two-fifths and unites as before stated with the second costal spot. Second dorsal spot beyond the middle, third spot at three-fourths, the last two spots are rather short and somewhat oblique. A small round dot in apical part of wing. Cilia dark brown, a pale periapical line and a white patch below the apex, some silvery white scales at the base, corresponding to the second and third dorsal spots, forming a short line. Hindwings fuscous, cilia concolorous. Underside of body and legs fuscous, with considerable lustre; ventral segments edged with white scales posteriorly. Femora and tibiae spotted with whitish. Tarsal joints at base and more or less beneath, whitish. Expanse 7.5-8.5 mm.; .3-.34 inch.

Hab.—Penna. (Hazleton); Conn. (East River).

Larva pale green, each segment with a transverse dark line, i with four transversely placed dots; it makes a pale, orange colored blotch-mine in upper side of leaf of *Kalmia angustifolia* (sheep-laurel); August, September. Imago the following May.

O. preciosella n. sp.—Pl. IV, fig. 2.—Palpi white, second and third joint with a white, dark fuscous band occupying the middle portion of each. Face silvery white, vertex dark brown, sparsely interspersed with white. Antennæ dark brown, finely annulate with white. Thorax dark brown, intermixed with silvery white scales. Forewings dark bronze-brown, with some lustre, markings pure silvery white; five costal spots, first close to the base, slightly oblique outwardly and crossing the fold; second at one-third, obliquely outward and forming with the first dorsal spot a curved fascia, widest on the dorsal margin; third spot about the middle, obliquely outward and not reaching the fold; fourth spot approximately midway between the preceding and following spot, perpendicular to the margin, triangular and reaches to middle of wing; the fifth spot is just before the apex, extends into the cilia and reaches nearly to the dorsal margin. Three dorsal spots, the first a little further from the base than the second costal spot; second and third approximate, two-thirds and three-fourths respectively, triangular, and midway between their free ends is the apex of the fourth costal spot. Basal half of cilia pale fuscous, margined externally by a dark fuscous line, outer half whitish, with a dark line half-way, free margin not tipped with

dark scales. Hindwings grayish-fuscous, cilia concolorous. Abdomen grayish-fuscous; anal bush grayish. Ventral segments edged with silvery gray. Legs dark fuscous, femora and tibiae spotted with silvery white; tarsi whitish, joints dark fuscous at their apices. Expanse 8 mm.; .32 inch.

Hab.—Penna. (Hazleton).

Larva pale yellowish-green, with greenish dorsal line, i with four transversely placed spots. On *Vaccinium corymbosum* (swamp huckleberry); August and September. Imago April and May.

O. crataegifoliella Clem.—Palpi whitish, a spot on the second joint externally and a broad annulus of the third joint dark fuscous. Head grayish-white, tufts dark fuscous, mixed with gray, somewhat tinged with russet. Forewings brown, with purple lustre; eight or nine costal striae, outer six or seven distinct; fifth stria, from the apex, extends in a straight line, more or less distinct to the dorsal margin, bisecting a dark dash in middle of wing, another dark line on the disk before the middle. A heavy dark line in basal part of fold; plical spots elongate triangular, conspicuous, not reaching the dorsal margin; subplical space white, speckled with fuscous. Cilia around the apex not tipped with dark fuscous scales. Expanse 8-8.5 mm.; .32-.34 inch.

Hab.—Eastern States.

Type in fairly good condition, in the Academy of Natural Sciences, Philadelphia. Dr. Clemens' description, however, does not tally well with the former, as he describes the labial palpi as whitish, without mentioning the dark spot on the second or the annulus on the third joint.

Larva on *Crataegus tomentosa* (Hawthorn); *O. inusitatumella* Ch., which Chambers, misled by Clemens' description and also by the habit of the larva, which does not leave the mine to pupate, considered as distinct, is according to Mr. Busck, identical with *crataegifoliella*, the latter having seen the type. The food-plant being the same.

O. dubitella n. sp.—Pl. IV, fig. 4.—Very closely related to the preceding and from which it differs as follows: Absence of basal streak in the fold; plical spots less distinctly triangular, the outer one in one specimen consisting of two distinct lines or streaks. The subplical space more distinctly white towards the base; a dark fuscous or blackish spot on the extreme base of dorsal margin and another just behind the anal angle. Its very distinctly larger size. Expanse 10 mm.; .4 inch.

Hab.—Penna. (Hazleton).

Five specimens bred from a shrub, unknown to me. The larvæ were collected in August, 1899, the moths appearing the following May. The only note on the primary stages states "larva at first

makes a nepticula-like tract, later forms a cocoon under the turned over edge of the leaf, the form of the latter is ovate." Undoubtedly distinct.

O. conspicuella n. sp.—Pl. IV, fig. 5.—Palpi white; apex of second joint and the third joint at middle spotted with dark fuscous, less distinct within. Head whitish, tufts pale fuscous, intermixed with pale yellowish. Forewing a rich, deep brown, with purple lustre; markings very conspicuous; eight or nine costal striae, outer four very distinct, becoming more approximate and effaced towards the base; an oblique dash at end of cell; first plical spot large, triangular, apex not quite reaching the dorsal margin, second plical spot large, subquadrate, including the dorsal margin and extending somewhat along the latter towards the base, another dark spot at end of subplical space, immediately beyond the latter is a curved dorsal streak, the end of which approximates the dark spot at end of wing. Cilia white around the apex, more intermixed with fuscous below, dark lines conspicuous; third coalescing with the second below apex. Expanse 8 mm.; .32 inch.

Hab.—Penna. (Hazleton).

Bred from *Betula nigra* (black birch); one specimen a female.

O. arbitrella n. sp.—Pl. IV, fig. 6.—Palpi white, third joint with a small blackish dot without and within. Head sordid white, tufts dark brown, shading into yellowish fuscous. Disc of thorax sordid white, sides and patagia dark brown, with feeble purplish lustre; seven or eight costal striae, more distinct towards the apex, outer ones reaching to middle of wing; a white spot at end of cell; first plical spot broadly triangular, not reaching the dorsal margin; second plical spot large, reaches the dorsal margin and is ill defined externally; outer part of subplical space almost entirely dark fuscous, basal portion sprinkled with the same. Cilia whitish, basal portion around apex and a broad patch below the latter fuscous; free margin around apex not tipped with fuscous. Expanse 8-9 mm.; .32-36 inch.

Hab.—Penna. (Hazleton).

Two specimens in my collection were bred from *Vaccinium corymbosum* (swamp huckleberry). Differs from *conspicuella*, especially by the absence of the curved dorsal line, and from the following species by the more strongly marked costal striae.

O. melanotella n. sp.—Pl. IV, fig. 7.—Palpi sordid white, third joint slightly spotted with fuscous externally. Head grayish-white, tufts fuscous, intermixed with gray. Thorax sordid white. Forewings brown, with a feeble, purple lustre; seven or eight slender costal striae, approximately alike and equidistant, not reaching beyond one-third of wing breath; a well-marked spot at end of cell. Plical spots large, quadrate, the first smaller and not attaining the margin, the second very large and including the dorsal margin; remainder of subplical space speckled with fuscous. Expanse 7 mm.; .28 inch.

Hab.—Penna. (Hazleton).

The single specimen which serves as type of this species, was bred by the writer from thorn (*Crataegus*) in 1899. The fine, yet very distinct and nearly alike costal striae are not seen in any other species known to me. Unfortunately the cilia are defective and I cannot discern whether they are tipped with dark fuscous or not, around the apex. It is therefore placed here tentatively, as it resembles more the two preceding species than any others.

O. anglicella Snt.—Palpi white, third joint broadly annulate with fuscous. Head yellowish-white, tufts brown. Thorax sordid white. Forewings dark gray, with numerous costal striae, more distinct towards the apex: a white spot at end of cell, preceded by a fuscous spot. Plical spots moderately large, not attaining the dorsal margin; subplical space rather densely speckled with fuscous. Basal portion of cilia pale fuscous, remainder grayish-white, third line entire, except just before the apex where it is interrupted. Expanse 9-11 mm. (Meyrick); .36-.44 inch.

Hab.—Europe; New England States.

I cite this species here on the authority of Lord Walsingham.* A well authenticated European specimen of this species is before me, but have not seen one from within our own faunal limits.

The third ciliary line, although complete, extends to but not around the apex, thus distinguishing it from any others of our North American species. The larva lives on *Crataegus* (hawthorn), also occasionally, according to Meyrick, on *Fragaria* (strawberry).

O. prunivorella Ch.—Palpi white, third joint with a wide, dark fuscous band, which leaves only the base and extreme apex white. Head grayish fuscous, tufts darker. Thorax grayish fuscous. Forewings dark brown, intermixed, especially in basal half with grayish-purple; costal striae rather obscure, more distinct on the costa, the outer four or five striae extending nearly to the dorsal margin; interstitial spaces conspicuously darker; subplical space not intermixed with white and scarcely paler than rest of wing; plical spots almost obsolete, a patch of blackish, semi-erect scales about middle of dorsal margin. Expanse 8-9 mm.; .32-.36 inch.

Hab.—Middle and Northern States of Atlantic slope.

Larva in mine on underside of leaf of wild cherry and apple.

Two specimens in my collection, received a number of years ago from Miss Murtfeldt, agree with specimens bred by the writer from wild cherry, and have the dorsal patch of semi-erect scales, especially well developed; they do not, however, agree with any specimens of the genus which I have bred from apple, the latter belong-

* Trans. Am. Ent. Soc., 1882, p. 193.

ing to a different species altogether (*quadripunctella*), and do agree with a specimen in the National Museum collection, bearing the label "*O. prunivorella* Ch. *geminatella* Pack. bred from apple." The authenticity of this specimen is in doubt. I have not seen the type of *geminatella*. To judge by the description it is the same as *prunivarella* Ch. Nevertheless, I have serious doubts on this point, and while positive as to the identity of *prunivorella*, feel compelled to assign *geminatella* as a doubtful synonym of the former.

O. quadripunctella Clem.—Palpi sordid white, dusted with fuscous, second joint with dark apical spot externally, third joint broadly annulate with blackish fuscous. Face fuscous, mixed with gray, tufts dark brown, occiput and thorax grayish-white, latter speckled with fuscous. Forewings grayish-fuscous, with feeble purplish lustre and scattered white scales; seven or eight whitish costal striae, approximately equidistant and increasing in length and distinctness towards the apex, where they almost reach the dorsal margin; apical spot well marked; plical spots in form of a subtriangular dash, extending but little into the subplical space, latter rather conspicuously white, with scattered fuscous specks. Cilia whitish, basal part and below the apex fuscous; three entire fuscous lines. Expanse 8.5-9.5 mm.; .34-.38 inch.

Hab.—Eastern States.

I entertain not the least doubt that this is the species of which Dr. Clemens described the larva and food-plant only. The former is pale yellowish, head and first segment each with a transverse row of black dots. I have bred specimens from *Pyrus arbutifolia* (choke berry), which is closely allied to and generally mistaken for *Amelanchier canadensis*. I have also bred it from apple. A specimen from the National Museum collection and referred to under *A. prunivarella* belongs here.

A specimen received from the National Museum collection, bred from quince (*Cydania vulgaris*), while scarcely distinguishable from the species under consideration, I feel restrained to consider at least as a variety, which eventually may prove to be specific.

Var. **albifaciella**.

Differs from typical specimens by the grayish-white head, face silvery white, tufts light yellowish fuscous. The larva also, according to a note on the label, differs "Larva differs from that on wild cherry, no black spots on thorax or head." This latter observation alone, if correct, would prove it a genuine species.

O. vicinella n. sp.—Pl. IV, fig. 8.—Labial palpi white, third joint with a wide blackish band, which leaves the basal third, extreme apex and upper edge of joint free, second joint with a small, but distinct dot near the apex, within and without. Head gray, strongly intermixed with brown on the vertex. Thorax grayish-fuscous; sides darker. Forewings dark brown, with purple linstre; eight or nine whitish costal striae, not very evident, nearly equidistant and not reaching beyond middle of wing, the white being distinct only on and closely to the costa, where they are rather wide and subtriangular; ground color between the striae of a decidedly darker brown; a white spot at end of cell; plical spots large but not sharply defined, the first not quite, the second fully, attaining the margin; remainder of subplical space more or less speckled with fuscous, so that the white is very little in evidence. Cilia with three entire lines, basal part fuscous, remainder whitish; a rather bright, white spot at the base of the cilia opposite the space between the third and fourth costal striae (counting from the apex). Expanse 7 mm.; .28 inch.

Hab.—Penna. (Hazleton).

A small form. A single specimen, female, was bred by the writer from *Betula flava* (yellow birch). An obscure dark species, the white color being scarcely noticeable.

O. strobivorella n. sp.—Palpi yellowish-white, apex of second joint and an ill-defined band of third fuscous. Face grayish-fuscous, tufts a rich brown, occiput and thorax creamy white. Forewings grayish-brown; seven or eight costal striae, very short, being scarcely more, especially towards the apex, then costal spots; a white spot at end of cell. Plical spots velvety black, very conspicuous, first not reaching the dorsal margin, second spot oval, and attains the margin, remaining part of subplical space finely speckled with fuscous. Cilia fuscous. Expanse 10 mm.; .4 inch.

Hab.—Penna. (Hazleton).

A single male specimen, not in very good condition, bred from *Sorbus* (mountain ash). The larva forms a cone similar to *Gracilaria*. The cilia are defective, but what is left leaves scarcely a doubt that the three lines are entire.

O. arbustifoliella n. sp.—Pl. IV, fig. 9.—Palpi white, apex of second joint and a rather large spot on the third, externally, dark fuscous. Head white, tufts pale fuscous. Thorax white. Forewings gray along middle of wing, dark brown between the costal striae; marking conspicuous, white; six or seven distinct costal striae, inner ones very oblique, fourth and fifth striae (from the apex) remote from each other, the latter extends as an undulating line towards the dorsal margin, which it attains at the tornus. Plical spots sharply defined, first spot elongate and reaching half-way to dorsal margin, second spot elongate-triangular, extending obliquely backward to within the dorsal margin; subplical space conspicuously white, with scattered fuscous dots. Cilia white, three entire dark lines. Expanse 9–10 mm.; .36–.4 inch.

Hab.—Penna. (Hazleton).

